Appl. No. 09/100,633
Amdt. dated June 26, 2003
Reply to Office Action of May 21, 2002

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-75 (canceled).

Claims 76-78 (canceled).

Claim 79. (currently amended): The method of ~~any of claims 76, 77 or 78~~ **Claim 91** wherein the receptor is bound to the substrate.

Claim 80. (currently amended): The method of ~~any of claims 76, 77 or 78~~ **Claim 91** wherein the ligand is bound to the substrate.

Claim 81. (currently amended): The method of ~~any of claims 76, 77 or 78~~ **Claim 91** wherein the receptor is a cell surface receptor.

Claim 82. (currently amended): The method of ~~any of claims 76, 77 or 78~~ **Claim 91** wherein the receptor is an intracellular receptor.

Claim 83. (currently amended): The method of ~~any of claims 76, 77 or 78~~ **Claim 91** wherein the receptor is a hormone receptor.

Claim 84. (previously added): The method of **claim 79** wherein the receptor is comprised within a cell membrane.

Claim 85. (currently amended): The method of ~~any of claims 76, 77 or 78~~ **Claim 91** wherein the ~~substrate bound~~ receptor or the ~~substrate bound~~ ligand docked to the substrate is ~~bound~~ docked to the substrate through a linker.

Claim 86. (currently amended): The method of ~~any of claims 76, 77 or 78~~ **Claim 85,** wherein the ~~substrate-bound receptor or the substrate-bound ligand is bound to the substrate through~~ linker comprises an antibody.

Claim 87. (currently amended): The method of ~~any of claims 76, 77 or 78~~ **Claim 91** wherein the ~~substrate-bound~~ receptor or the ~~substrate-bound~~ ligand docked to the substrate ~~is comprised within~~ comprises a fusion protein ~~further comprising a detectable moiety~~.

Claim 88. (currently amended): The method of ~~claim 87~~ **Claim 92** wherein the ~~detectable~~ moiety for specific binding is an Fc fragment and the ~~substrate-bound~~ receptor or the ~~substrate-bound~~ ligand docked to the substrate is ~~bound~~ docked to the substrate through protein A.

Claim 89. (currently amended): The method of ~~any of claims 76, 77 or 78~~ **Claim 91** wherein the agent is a small organic molecule.

Claim 90. (currently amended): The method of ~~any of claims 76, 77 or 78 wherein the agent is comprised in~~ **Claim 93** wherein said plurality of agents comprises a combinatorial library.

Claim 91. (new): A method for determining whether an agent modulates binding between a receptor/ligand pair that specifically bind to each other, the method comprising the steps of:

a) providing a mass spectrometry probe, the probe comprising a substrate having a surface and a receptor or ligand of said receptor/ligand pair docked to a surface of the substrate;

b) exposing the receptor or the ligand docked to the substrate to its binding partner and to said agent under conditions that allow binding between the receptor and the ligand;

c) removing unbound binding partner from the surface of the substrate;

d) measuring the amount of binding partner bound to the docked receptor or ligand in the presence and absence of the agent by laser desorption mass spectrometry of any bound binding partner from the surface of the substrate; and

e) determining whether the agent modulates binding by comparing the measured amount of binding between the receptor and the ligand in the presence and absence of the agent whereby a difference between the measured amount of binding between the receptor and ligand in the presence and absence of the agent indicates that the agent modulates binding between the receptor/ligand pair.

Claim 92. (new): The method of **Claim 87** wherein the fusion protein further comprises a moiety for specific binding.

Claim 93. (new): The method of **Claim 91**, wherein said method is a screening method and said agent comprises a plurality of agents, whereby said plurality of agents is screened by determining whether said plurality of agents modulates binding between a receptor/ligand pair that specifically bind to each other.

Claim 94. (new): The method of **Claim 93**, wherein said plurality of agents is screened in parallel.

Claim 95. (new): The method of **Claim 85**, wherein the linker is a bifunctional linker.

Claim 96. (new): The method of any one of **Claim 91** or **Claim 93** wherein said agent inhibits binding between said receptor/ligand pair.

Claim 97. (new): The method of any one of **Claim 91** or **Claim 93** further comprising applying a matrix material to the surface before laser desorption mass spectrometry.

Claim 98. (new): The method of any one of any one of **Claim 91** or **Claim 93** wherein the probe further comprises energy absorbing molecules chemically bound to the surface before exposing.